AIAdvisors

OBJECTIVE RESEARCH BRIEF

How Educational Institutions Are Using AI Today

Real-world case studies from universities, community colleges, and K-12 systems

Executive summary

Educational institutions are using AI most effectively when the tool is tied to a specific institutional bottleneck: answering repetitive student questions, preventing enrollment melt, identifying students at risk early, tutoring students when faculty are unavailable, giving faster feedback, and helping staff focus on cases that require human judgment.

Evidence note: The strongest public examples combine measurable operational outcomes with human oversight. Several metrics in this brief come from university publications, peer-reviewed or preprint research, vendor case studies, and education trade reporting; they should be treated as public case evidence, not independently audited institutional performance reports.

Evidence snapshots

22% less melt

Georgia State reported that Pounce answered 200,000+ questions and reduced summer melt by 22% in the first summer.
Source: Georgia State [1]

80% accuracy

Ivy Tech reports daily machine-learning predictions of student course outcomes with 80% accuracy.

Source: Google for Education [2]

10M queries

Harvard CS50 reported 211,000 users and 10 million AI tutor queries by mid-November 2024.

Source: Harvard CS50 paper [4]

500 to 27 holds

UMES used AI-enhanced outreach to reduce unresolved enrollment holds from 500 to 27.

Source: Mainstay [5]

Core pattern

The pattern is not simply "AI in the classroom." AI is being used as service capacity, tutoring capacity, feedback capacity, and early-alert capacity. The best implementations keep faculty and staff in the loop while using automation to make support available earlier and more consistently.

Case studies: enrollment, early alert, teaching assistants

1. Georgia State University - Pounce enrollment chatbot

INSTITUTION TYPE

Public university in Atlanta using AI-enhanced student-success systems to support admissions, enrollment, and persistence at scale.

AI WORKFLOW

Georgia State deployed Pounce, an AI-enhanced text-messaging chatbot, to answer incoming-student questions 24/7 and nudge students through financial aid, immunization, testing, registration, and other enrollment tasks.

MEASURED IMPACT

In its first summer, Pounce delivered more than 200,000 answers, reduced summer melt by 22%, and translated into 324 additional students arriving for the first day of classes. Georgia State also reported it would have needed 10 full-time staff to handle the same messaging volume manually.

OPERATIONAL TAKEAWAY

AI worked because it addressed a narrow but high-stakes administrative gap. Students did not need a generic chatbot; they needed timely answers during the weeks when missed tasks can prevent enrollment.

Source: Georgia State Student Success Initiatives [1]

2. Ivy Tech Community College - predictive early-alert analytics

INSTITUTION TYPE

Indiana statewide community college system; the Google case profile describes Ivy Tech as serving 160,000 students across 40 locations.

AI WORKFLOW

Ivy Tech built a machine-learning engine using anonymized and aggregated student interaction metadata from its learning management system to identify students at risk of failing early in the term.

MEASURED IMPACT

In a fall 2016 pilot across 10,000 course sections, Ivy Tech identified 16,000 students statistically at risk by week two. Outreach helped 3,000 contacted students finish with a C or better; the college reports daily predictions now run with 80% accuracy and that the initiative has helped 34,712 students and counting.

OPERATIONAL TAKEAWAY

Predictive analytics created value only because the institution paired risk signals with human outreach. The model surfaced who needed support; staff then helped resolve concrete barriers such as lost utilities, missing books, or access issues.

Source: Google for Education customer story [2]

3. Georgia Tech - Jill Watson virtual teaching assistant

INSTITUTION TYPE

Public research university; the 2023 deployment included Georgia Tech's Online Master of Science in Computer Science artificial intelligence course with more than 600 students and an English course at Wiregrass Georgia Technical College.

AI WORKFLOW

Jill Watson is a course-specific virtual teaching assistant that answers student questions using verified course materials, retrieval, moderation, and response checking rather than relying on open-ended chatbot behavior.

MEASURED IMPACT

Georgia Tech reported Jill Watson accuracy ranging from 75% to 97% depending on content source, compared with about 30% for OpenAI Assistant in the comparison. Students with Jill saw more A grades (66% vs. 62%) and fewer C grades (3% vs. 7%) in the reported A/B experiment.

OPERATIONAL TAKEAWAY

This case shows the value of bounded AI. The system was designed around course content and teaching presence, with guardrails that reduced hallucination risk and supported students without replacing instructors.

Source: Georgia Tech Research [3]

Case studies: tutoring, student service, staff capacity

4. Harvard University CS50 - AI tutor and coding support

INSTITUTION TYPE
Large introductory computer science course with on-campus students and a massive online learner population.
AI WORKFLOW
CS50 built a course-specific AI "duck" to provide 24/7 coding support, explain code snippets, answer course questions, help with debugging, and guide students without simply giving away assignment solutions.
MEASURED IMPACT
After testing with 70 students in summer 2023, CS50 expanded to several hundred on-campus students and thousands online. By mid-November 2024, about 211,000 students had used the duck, generating 10 million queries at an average cost of $1.50 per student per year; 75% used the tools frequently and 94% found them helpful and effective.
OPERATIONAL TAKEAWAY
The lesson is to build AI around pedagogy. CS50 uses AI to approximate always-on office hours while continuing to refine safeguards when responses become too direct or drift from instructional goals.

Source: Harvard CS50 research paper [4]

5. University of Maryland Eastern Shore - AI for enrollment holds

INSTITUTION TYPE
Public university in Princess Anne, Maryland, with a Mainstay case profile listing approximately 4,500 students.
AI WORKFLOW
UMES used AI-enhanced, research-backed text conversations to proactively reach students with unresolved enrollment holds, give clear next steps, and escalate complex situations to staff.
MEASURED IMPACT
The number of unresolved holds dropped from more than 500 to 27. The case study reports staff could redirect time toward high-need students while every student with a hold received personalized outreach.
OPERATIONAL TAKEAWAY
AI was used as a scaling mechanism for student service. It made routine but important outreach systematic, while preserving staff capacity for cases that needed human attention.

Source: Mainstay UMES case study [5]

6. Adelphi University - campuswide digital support assistant

INSTITUTION TYPE
Private university in Garden City, New York, with a Mainstay case profile listing approximately 7,600 students.
AI WORKFLOW
Adelphi launched Adele as a conversational AI assistant on selected webpages and later expanded it to two-way SMS messaging for approximately 6,000 current students, with reminders, nudges, routing, and escalation to human staff.
MEASURED IMPACT
The reported measurable impact includes 81,167 bot-handled messages, 1,353 staff capacity hours restored, a 62% satisfaction score, and a 70% helpfulness rating. The effort also gave leadership visibility into recurring student friction points across departments.
OPERATIONAL TAKEAWAY
The operational lesson is that AI can function as both a support channel and a diagnostic signal. Repeated student questions reveal broken processes, confusing deadlines, and places where better communication is needed.

Source: Mainstay Adelphi case study [6]

Case studies: recruitment, K-12 literacy, custom agents

7. University of West Florida - AI chatbot for recruitment

INSTITUTION TYPE
Public university in Pensacola, Florida; the Mainstay case profile lists 12,850 undergraduates.
AI WORKFLOW
UWF implemented Argie, an AI chatbot, for recruitment in fall 2017 and later extended the model to transfer students, using proactive nudges and conversational support to reduce friction in the application and enrollment cycle.
MEASURED IMPACT
UWF reported a 2% increase in completed applications and a 3% increase in conversion from confirmed to enrolled for the first incoming freshman cohort. With a full transfer-student cycle for spring 2020, UWF reported a 33.3% increase in completed applications and a 35% increase in enrollment confirmations.
OPERATIONAL TAKEAWAY
Recruitment AI is strongest when it helps students complete next steps earlier. The business value for institutions is clearer yield visibility, fewer stalled applications, and reduced staff chasing.

Source: Mainstay UWF case study [7]

8. Southeast Delco School District - AI reading tutor

INSTITUTION TYPE
Pennsylvania K-12 district; the CBS case focuses on Harris School, a K-8 school in Collingdale, and students in grades 1-3.
AI WORKFLOW
The district uses Amira, an AI-powered literacy tool, as a personalized reading tutor. Students read aloud for 15-20 minutes per day while the software listens, corrects mistakes, provides feedback, and records progress for teachers and families.
MEASURED IMPACT
CBS Philadelphia reported that the tool began as a 2024-25 pilot and was made permanent for 2025-26 with a one-year contract not to exceed $13,300. Harris School reported average words read per minute increased from 59 at the beginning of the year to 91.
OPERATIONAL TAKEAWAY
This K-12 example shows AI supplementing small-group instruction. The tool handles repeated oral-reading practice and diagnosis while teachers use the time for targeted groups and direct instruction.

Source: CBS Philadelphia [8]

9. University of Sydney - educator-controlled AI agents

INSTITUTION TYPE
Large research university in Australia using Cogniti, a university-developed AI assistant platform that lets educators create custom agents for specific subjects and assignments.
AI WORKFLOW
Educators create AI agents trained on course instructions, rubrics, subject material, and guardrails. Use cases include speech-pathology role-play, chemical-engineering question support, musicology Socratic feedback, biology tutoring, and scientific-writing feedback.
MEASURED IMPACT
The University of Sydney reported more than 800 educators using Cogniti, and that it is being tested or used by approximately 100 educational institutions globally. In first-year biology, three agents supported a 1,500-student cohort, logging 1,205, 4,183, and 1,500 conversations respectively; students who used the writing assistant scored higher on the scientific-report assessment than non-users.
OPERATIONAL TAKEAWAY
The strongest design feature is teacher control. Rather than giving students generic AI access, the institution lets educators define the learning purpose, data sources, guardrails, and feedback model.

Sources: University of Sydney and Teaching@Sydney [9] [10]

Education AI use-case map

Use case	Institutional problem solved	Best public story
Enrollment chatbot	Students miss administrative tasks between admission and first day.	Georgia State Pounce
Predictive early alert	Staff identify struggling students too late to intervene effectively.	Ivy Tech NewT / Project Student Success
Course-specific AI TA	Students need accurate course answers outside office hours.	Georgia Tech Jill Watson
AI coding tutor	Large courses cannot provide 1:1 debugging support on demand.	Harvard CS50 Duck
Student-service routing	Routine questions consume staff time and students contact the wrong office.	Adelphi Adele; Ocean County Reggie
Registration hold resolution	Unresolved holds block registration and overwhelm staff.	UMES AI-enhanced outreach
K-12 reading tutor	Teachers need more individualized oral-reading practice and assessment.	Southeast Delco / Amira
Educator-built AI agents	Generic AI does not align with unit-specific objectives and rubrics.	University of Sydney Cogniti

Practical lessons for education leaders

Start with a support bottleneck, not a technology initiative. The strongest cases focus on questions, holds, course support, feedback, and literacy practice. Keep humans in the loop. Staff and faculty set the goal, manage guardrails, review escalations, and improve the process. Measure operational and learning outcomes separately. Track response volume, staff hours, yield, hold resolution, engagement, and academic performance; do not assume student satisfaction equals learning impact.

Selected sources

[1] Georgia State Student Success Initiatives, Pounce and summer melt reduction.
[2] Google for Education customer story, Ivy Tech machine-learning early intervention.
[3] Georgia Tech Research, Jill Watson classroom deployment and A/B findings.
[4] Liu et al., Improving AI in CS50, SIGCSE TS 2025.
[5] Mainstay, University of Maryland Eastern Shore enrollment-hold reduction case study.
[6] Mainstay, Adelphi University Adele student-support case study.
[7] Mainstay, University of West Florida Argie recruitment chatbot case study.
[8] CBS Philadelphia, Southeast Delco School District Amira reading-tutor report.
[9] University of Sydney, Cogniti award and adoption article.
[10] Teaching@Sydney, first-year biology Cogniti AI agents case study.

BOTTOM LINE

AI is most credible in education when it is specific, bounded, and accountable: one workflow, one student need, clear escalation paths, and measurable outcomes.